What is claimed is:

1. An aeration system for a body of liquid comprising:

a support member which is disposed within the body of liquid proximate the top surface thereof;

a wind-driven rotor unit rotatably supported on said support member;

a pump that is activated by rotation of said rotor unit, said pump being supported on said support member having a pump chamber;

a drive mechanism connected to said rotor unit and said pump to actuate said pump by rotary motion of said rotor unit; and

an aeration tube sealingly engaged with said pump, said aeration tube having a distal end disposed proximate the submerged bottom surface of the body of water such that when said pump is activated, air is displaced from said pump chamber, through said aeration tube, to within the liquid.

2. An aeration system according to Claim 1, wherein said pump is activated by a magnetic force.

3. An aeration system according to Claim 1, wherein said pump is activated by a mechanical force.

4. An aeration system according to Claim 4, wherein said drive mechanism is a cam and follower arrangement to generate said mechanical force.

5. An aeration system according to Claim 1, wherein:

said rotor unit is supported on a substantially vertically oriented rotor shaft projecting vertically from said support member so as to be rotatable;

said rotor unit disposed proximate a substantially hollow and cylindrical pump housing;

an arcuately rectangularly shaped rotor magnet, said rotor magnet fixed to said rotor unit so as to rotate therewith;

a pump frame fixedly disposed adjacent said pump;

a substantially horizontally oriented pump shaft biasly disposed through a second end wall of the pump extending horizontally therefrom and terminating in an exterior contact, said pump shaft being movable horizontally through reciprocating motion to effect pumping of air;

an elongate pump lever pivotally secured to said pump frame, said pump lever having a top portion adjacent said rotor magnet, and a bottom portion adjacent said contact; and

a lever magnet having the same polarity as the rotor magnet, said lever magnet fixed to said top portion of said pump lever such that when said rotor magnet is rotated so as to be disposed adjacent said lever magnet, a repulsive magnetic force biases said top portion of said pump lever away from said rotor magnet, which biases said bottom portion against said contact, to pump air out of the pump.

6. An aeration system according to Claim 1, wherein:

said rotor unit is supported on a substantially vertically oriented rotor shaft so as to be rotatable;

said rotor unit having an eccentric cam extending into a substantially hollow and cylindrical pump housing;

a pump frame fixedly disposed adjacent said pump;

a substantially horizontally oriented pump shaft biasly disposed through a second end wall of the pump extending horizontally therefrom and terminating in an exterior contact, said pump shaft being movable horizontally through reciprocating motion to effect pumping of air; and

an elongate pump lever pivotally secured to said pump frame, said pump lever having a top portion adjacent said eccentric cam, and a bottom portion adjacent said contact such that when said cam rotates against said top portion of said pump lever, said top portion of said pump lever biases in cyclic fashion away from and toward said rotor shaft, which biases said bottom portion toward and away from said contact, to pump air out of the pump.

7. An aeration system according to Claim 1, wherein a diffuser is attached to a bottom end of said aeration tube.

8. An aeration system according to Claim 1, wherein the aeration system has a substantially hollow cylindrical pump housing that encases said pump;

said support member comprising a buoyant flotation unit secured to said pump housing, and extending radially from said pump housing;

a cylindrical ballast unit extending downwardly from said floatation unit;

an anchor rope extending from said ballast unit substantially adjacent said aeration tube, said anchor rope having a distal end; and

an anchor secured to said distal end of said anchor rope, such that the aeration system floats on said body of liquid, and said ballast unit maintains the aeration system in a substantially vertical orientation, and the

anchor prevents the aeration system from floating to undesired locations.

9. An aeration system according to Claim 1, wherein the aeration system is fixedly disposed to a fixed structure.

10. An aeration system for a body of water comprising:

a wind-driven rotor unit supported above the surface of the body of water;

a pump that is activated by rotation of said wind-driven rotor member;

an aeration tube sealingly engaged with said pump, said aeration tube having a distal end; and

a foot valve disposed within said distal end, such that when said pump is activated, a gas comprising at least the combination of both nitrogen and oxygen is displaced from foot valve and into the body of water.

11. An aerator for a body of water comprising:

a floatation unit adapted to float on the body of water;

a pump supported on said floatation unit which includes a linearly reciprocatable drive shaft which pumps air from a pump chamber, said pump being connected to at least one aeration line which extends downwardly below a surface of the water body for aeration thereof during pumping of said pump;

a wind-driven rotor unit rotatably supported on the floatation body; and

a drive mechanism interconnecting said rotor unit and said pump to convert rotary motion of said rotor unit into linear reciprocating motion of said drive shaft.

12. An aerator according to Claim 11, wherein said rotor unit includes a drive unit which rotates in unison therewith, said drive mechanism further including a lever which pivots about a horizontal pivot axis and includes a first portion which cooperates with said drive rotor to effect linear reciprocating displacement of said first portion in response to rotary motion of said drive rotor and a second portion which is spaced from said first portion and effects reciprocating linear displacement of said drive shaft.

13. An aerator according to Claim 12, wherein said drive rotor and said first lever portion include cooperating magnets to effect pivoting of said lever.

14. An aerator according to Claim 12, wherein said drive rotor comprises an eccentric cam and said first lever portion cooperates with said cam.

15. An aerator according to Claim 11, wherein said pump is a diaphragm pump and said drive shaft extends sidewardly therefrom.

16. An aerator according to Claim 15, wherein said drive shaft includes a biasing arrangement which generates a restoring force to oppose the pivoting movement of said lever caused by said drive mechanism.

17. An aerator according to Claim 11, wherein a support mast projects vertically from said floatation member and said rotor unit is rotatably supported on said mast by a bearing arrangement.

18. An aerator according to Claim 11, wherein said aeration lines have distal ends which are disposed

proximate a bottom of said water body to generate an aeration column of air which extends from proximate said bottom to said top surface of said water body.

19. An aerator according to Claim 18, wherein said aeration line includes a diffuser section thereon which diffuse the supply of air passing therethrough and disperse said air within said water body.

20. An aerator according to Claim 11, which includes anchor ropes projecting downwardly therefrom having lower ends connected to an anchor which is non-movably disposed on the bottom of the water body, said aeration lines being affixed to said anchor ropes.